

Claims:

1. A method for assaying homocysteine in a sample, said method comprising:

contacting said sample with two or three stable aqueous reagents containing a polyhapten, comprising S-adenosine homocysteine (SAH) as hapten moieties the ?? ^{which element} hapten, SAH hydrolase, a primary antibody capable of binding to said SAH polyhapten whereby to produce a complex, and if desired one or more of adenosine or an adenosine analog, a reducing agent, a further enzyme capable of converting said adenosine or adenosine analog or a conversion product of said SAH hydrolase, and a second antibody capable of binding to said complex, said primary antibody also being capable of binding to said adenosine or adenosine analog or a conversion product of one of said enzymes whereby the quantity of said complex produced is indicative of the content of homocysteine in said sample; and photometrically detecting said complex.

2. A method as claimed in claim 1 wherein at least one of said reagents contains a said secondary antibody.

3. A method as claimed in claims 1 or 2 wherein said complex is determined nephelometrically or turbidimetrically.

4. A method as claimed in any of claims 1 to 3 wherein photometric determination takes place before complex generation is complete.

5. A method as claimed in any of claims 1 to 4 wherein said sample is a serum or plasma sample.

6. A method as claimed in any of claims 1 to 5 wherein at least one of said reagents additionally contains an agent which promotes precipitation of said complex.

APP 34 AMDT

7. A method as claimed in claim 6 wherein said agent which promotes precipitation is polyethylene glycol.

8. A method as claimed in any of claims 1 to 7 wherein at least one of said reagents further comprises a carrier protein.

9. A method as claimed in any of claims 1 to 8 wherein said polyhapten consists of a backbone structure onto which the hapten moieties are bound.

10. A method as claimed in claim 9 wherein said backbone structure is porcine thyroglobulin.

11. A method as claimed in any of claims 1 to 10, wherein at least one of said reagents contains said primary and secondary antibodies and additionally contains a chaotropic salt.

12. A homocysteine assay reagent kit comprising two or three stable aqueous reagents containing a polyhapten comprising S-adenosine homocysteine (SAH) as hapten moieties, SAH hydrolase, a primary antibody capable of binding to said SAH polyhapten whereby to produce a complex, and if desired one or more of adenosine or an adenosine analog, a reducing agent, a further enzyme capable of converting said adenosine or an adenosine analog or a conversion product of said SAH hydrolase, and a second antibody capable of binding to said complex, said primary antibody also being capable of binding to said adenosine or an adenosine analog or a conversion product of one of said enzymes.

13. A kit as claimed in claim 12 wherein at least one of said reagents contains a said secondary antibody.

- 22 -

14. A kit as claimed in either of claims 12 or 13, wherein at least one of said reagents additionally contains an agent which promotes precipitation of said complex.

15. A kit as claimed in claim 14 wherein said agent which promotes precipitation is polyethylene glycol.

16. A kit as claimed in any of claims 12 to 15 wherein at least one of said reagents further comprises a carrier protein.

17. A kit as claimed in any of claims 12 to 16 wherein said polyhapten consists of a backbone structure onto which the hapten moieties are bound.

18. A kit as claimed in claim 17, wherein said backbone structure is porcine thyroglobulin.

19. A kit as claimed in any of claims 12 to 18 wherein at least one of said reagents contains said primary and secondary antibodies and additionally contains a chaotropic salt.

20. A kit as claimed in any of claims 12 to 19 containing two said reagents.

- 23 -

containing two said reagents.

23. An aqueous assay reagent containing a chaotropic salt, an immuno-precipitation enhancer, a primary antibody and a secondary antibody.